

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.

# SEQUENCE LISTING

<110> Kim, Jungsuh P.  
Starr, Douglas B.  
Tam, Albert W.  
Laurance, Megan E.  
Michelotti, Emil F.  
Velligan, Mark D.  
Latour, Derek R.  
Thomas, Rita L.  
Kongpachith, Ana  
Sheppard, Liana T.  
Lim, Moon Young  
Bruice, Thomas W.

<120> PROMOTERS FOR REGULATED GENE EXPRESSION

<130> 4600-0135.30

<140> Not Yet Assigned

<141> Filed Herewith

<150> US 60/209,549

<151> 2000-06-06

<160> 78

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1903

<212> DNA

<213> Homo sapiens

<400> 1

cagctggggc	gcccttgtgc	gcgggctgat	gctctgaggc	ttggctatgc	gggggccaac	60
gcgattgtgg	gtgctcgggg	agtggggggg	ggcacgaccg	taggtgctcc	ctgctggggc	120
aacccatcgc	tccccatgcg	gaatccgggg	gtaattaccc	ccccaggacc	cggaatatta	180
gtaatcctaa	ttcccggggg	gggagggggg	gcgggaggaa	ttcaccctga	aaggtggggg	240
tggggggggt	cgcattctgc	tgtgagcacc	ctggcggaag	ggagagggct	ttttctatca	300
gttttctttg	agcttttact	gttaagaggg	tacgggtggt	tgatgacact	gaactatatt	360
caaaaggaag	taaatgaaca	gttttcttaa	tttggggcag	gtactgtaaa	aataaaaaaca	420
aaagttaaga	cagtaaatg	tccttttatt	ttttaatgca	ccaaagagac	agaacctgta	480
attttaaaaa	ctgtgtattt	taattttacat	ctgcttaagt	ttgcgataat	attggggacc	540
ctctcatgta	accacgaaca	cctatcgatt	ttgctaaaaa	tcagatcagt	acactcgttt	600
gtttaattga	taattgttct	gaattatgcc	ggctcctgcc	agccccctca	cgctcacgaa	660
ttcagtccca	gggcaaattc	taaaggtgaa	gggacgtcta	cacccccaac	aaaaccaatt	720
aggaacttcg	gtgtctttgt	cccaggcaga	ggggactaat	atttcagca	atttaatttc	780
ttttttaatt	aaataaaatg	agtcagaatg	gagatcaactg	tttctcagct	ttccattcag	840
aggtgtgttt	ctcccggtta	aattgccggc	acgggaaggg	agggggtgca	gttggggacc	900
cccgcgaagga	cgactggtc	aaggtaggaa	ggcagcccga	agagtctcca	ggctagaagg	960
acaagatgaa	gaaatgctg	gccaccatct	tgggctgctg	ctggaatttt	cgggcattta	1020
ttttatttta	ttttttgagc	gagcgcgatc	taagctgaaa	tccctttaac	ttttagggtt	1080
accccccttg	gcatttgcaa	cgacgcccct	gtgcgcggga	atgaaacttg	cacaggggtt	1140
gtgtgcccgg	tcctccccgt	ccttgcatgc	taaattagtt	cttgcaattt	acacgtgtta	1200
atgaaaatga	aagaagatgc	agtcgctgag	attctttggc	cgtctgtccg	cccgtgggtg	1260
cctcgtggc	gttcttgga	atgcgcccat	tctgcggct	tgatattggg	gtgtcgccgc	1320
gccccagtc	ccccttctcg	tggctctccc	aggctgcgtg	ctgtgccggc	cttctagtt	1380
gtccccact	gcagagccac	ctccacctca	ccccctaaat	cccggggggac	ccactcgagg	1440
cggacggggc	cccctgcacc	cctcttcctt	ggcggggaga	aaggctgcag	cggggcgatt	1500

tgcatttcta	tgaaaaccgg	actacagggg	caactccgcc	gcagggcagg	cgcgggcgct	1560
cagggatggc	ttttgggctc	tgccccctcg	tgctcccggc	gtttggcgcc	cgcgccccct	1620
ccccctgcgc	ccgccccccg	ccccctcccc	ctcccattct	ctgccgggct	ttgatctttg	1680
cttaacaaca	gtaacgtcac	acggactaca	ggggagtttt	gttgaagttg	caaagtcctg	1740
gagcctccag	agggctgtcg	gcgcagtagc	agcgagcagc	agagtccgca	cgctccggcg	1800
aggggcagaa	gagcgcgagg	gagcgcgggg	cagcagaagc	gagagccgag	cgcggaacca	1860
gccaggaccc	acagccctcc	ccagctgccc	aggaagagcc	cca		1903

<210> 2  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 2	
gcacgcgtgc tagccagctg ggccgccctt gt	32

<210> 3  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 3	
atccatggaa gctttggggc tcttcctggg ca	32

<210> 4  
 <211> 34  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 4	
gcacgcgtgc tagctggagc ctccagaggg ctgt	34

<210> 5  
 <211> 10  
 <212> DNA  
 <213> Homo sapiens

<400> 5	
gagttttggt	10

<210> 6  
 <211> 7  
 <212> DNA  
 <213> Homo sapiens

<400> 6	
gagtttt	7

<210> 7  
 <211> 16  
 <212> DNA  
 <213> Homo sapiens

<400> 7  
cagtaacgtc acacgg

16

<210> 8  
<211> 10  
<212> DNA  
<213> Homo sapiens

<400> 8  
cctccagagg

10

<210> 9  
<211> 2395  
<212> DNA  
<213> Homo sapiens

<400> 9  
gaattcactg gggagagcat tcaggaagat gacaacagga taatagggtca acagagtaat 60  
agagaggtcg ctaaaaataa actctaagaa gtattcagcc aaaactatta ttgagctaata 120  
aatgggtggga tcaattttcag gggaatattg tgggcagaag tcagactgta ggaggctggg 180  
gatcaagaag ttgaggcaag gaggttggac aacaactggt ttttcaagtt gggtcacgtga 240  
acaaatctgt gaccttcagc ctccccctccc tcgggtcttg gctgagctga ttgcaggggcc 300  
cctgcagctc tggcactctc aagttgtata aaactgacag tgcagaagtc cttgagccca 360  
ttttggctct catgataatt ttccctcagt ggaactaagg ttacttgtct aagaacccaaa 420  
gcctctgact tgactgatca aagttcatca cgtgcacga agccacctac ttggcagatg 480  
tagtgaaaag ctacatagat ctggggccag gacaggatgc tggggcgtgg gaggggaaga 540  
aagcaggtgc taactatata gatagcatgc ctatcagagc agtttttacg tttcctatatt 600  
gtctctcaaa acaattttat aggaatcatc aaagcaattt tatcatgggt tctagaccag 660  
gtttggatgt gaggtaggga tttccacagc tgcttttagt ttgaaggaaa tctgataaga 720  
tgatgcaaaa gcccttcaga aatgtgtaat cctacacact tcagtgattc aattcattgt 780  
caaaacttaa ggtgttttta atattgttat tgttcatttg gtttttacca acatgtaagg 840  
agttggcaat tatttgttaa actcatgtct taggctaaat aaattccaaa aaattcagga 900  
tgagaattgt ttattgctta acgtgtgtca aatttcttcc atgcacatct ttattagatc 960  
ttcacagcaa cctacaggat aagcaagaca ggtgcaagt cctccttttg gtatgaggaa 1020  
actgaggtct aaagagatga agtgatttgc ccaaggctca tagcaattta ttggtagagc 1080  
aaagactaga attctcttaa ctgcagccta ttttccctat tctgaactgt tacatcagca 1140  
tcaacaatta tctaattgat tggaacagtg tacacaggca gcttagctac gtcaagtcac 1200  
gatttttact ttaacttcaa ttccagagtc ttggcctgat ttccctcaag accctactta 1260  
tctttggctt tggaaaattt atttttcttg cattatcttt ccagctaaat tttatttaat 1320  
aaccatcagc atgctttttt tgctttatgc catgtagact tgacctgaaa acctgccagg 1380  
ctttcattga gtttagtgat taaagaagta aagttctgag aagcaattag ttgatgggac 1440  
accagtcata aatcaatcc aaacttttgt tgacatgtgt ttctttctcc atataccagg 1500  
ttcccgcttc gtattagtaa gattgaaatt gaaataagtc tattgctggt ggatgaattt 1560  
gtcactttcc ttgaaactgg tgaacccaaa aagttagaca gtgataggaa aatactgcca 1620  
ttgtctgtta agaagtctat gacatttcaa ggcaagaatg aatatatgga agaagaaact 1680  
tgtttcttct ttacttacaa aaaggaaagc ctggaagtga atgatatggg tataattaaa 1740  
aaaaaaaaaa aaaacaaaaa acctttacgt aacgttttgc tgggagagaa gactacgaag 1800  
cacattttcc aggaagtgtg ggctgcaacg attgtgcgct cttactaat cctgagtaag 1860  
gtggccactt tgacagtctt ctcatgctgc ctctgccacc ttctctgcca gaagatacca 1920  
tttcaacttt aacacagcat gatcgaaaca tacaaccaa cttctccccg atctgcggcc 1980  
actggactgc ccatcagcat gaaaattttt atgtatttac ttactgtttt tcttatcacc 2040  
cagatgattg ggtcagcact ttttgctgtg tatcttcata gaaggctgga caaggtaaga 2100  
tgaaccacaa gcctttatta actaaatttg gggctcctac taattcatag gttggttcta 2160  
cccaaatgat ggatgatggg agaaaccaa tagaagaatg gtcttggtggc ataattgttg 2220  
ttccctagtc aatgaactct catattcttg tctctgggta ggatcttggg atctggagtc 2280  
agactgcctg ggctcaaact ttggctctgc ccataccatc tctgttatcc tggggcaagt 2340  
gcctcagttt ccacatctga gaaatgggga tggtagtggg gtccatttca tagat 2395

<210> 10  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
 <223> primer  
  
 <400> 10  
 ttatgatacc tcgaggggag agcattcagg aagatg 36  
  
 <210> 11  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 11  
 tgaatcacga agcttttgga tcttctggca gagaag 36  
  
 <210> 12  
 <211> 24  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 12  
 gatgaatttg tcactttcct tgaa 24  
  
 <210> 13  
 <211> 20  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 13  
 gacatttcaa ggcaagaatg 20  
  
 <210> 14  
 <211> 35  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 14  
 acatttcaag gcaagaatga atatatggaa gaaga 35  
  
 <210> 15  
 <211> 37  
 <212> DNA  
 <213> Homo sapiens  
  
 <400> 15  
 tacgaagcac attttccagg aagtgtgggc tgcaacg 37  
  
 <210> 16  
 <211> 250  
 <212> DNA  
 <213> Hepatitis B virus  
  
 <400> 16  
 gcacgtcgca tggagaccac cgtgaacgcc caccaaatat tgcccaaggt cttacataag 60  
 aggactcttg gactctcagc aatgtcaacg accgaccttg aggcatactt caaagactgt 120  
 ttgtttaaag actgggagga gttgggggag gagattaggt taaaggtctt tgtactagga 180  
 ggctgtaggc ataaattggt ctgcgcacca gcaccatgca actttttcac ctctgcctaa 240  
 tcattctcttg 250

<210> 17  
 <211> 12  
 <212> DNA  
 <213> Hepatitis B virus

<400> 17  
 gactgtttgt tt 12

<210> 18  
 <211> 12  
 <212> DNA  
 <213> Hepatitis B virus

<400> 18  
 aggactcttg ga 12

<210> 19  
 <211> 15  
 <212> DNA  
 <213> Hepatitis B virus

<400> 19  
 tacttcaaag actgt 15

<210> 20  
 <211> 23  
 <212> DNA  
 <213> Hepatitis B virus

<400> 20  
 tacttcaaag actgtttggt taa 23

<210> 21  
 <211> 15  
 <212> DNA  
 <213> Hepatitis B virus

<400> 21  
 ggctgtaggc ataaa 15

<210> 22  
 <211> 156  
 <212> DNA  
 <213> Hepatitis B virus

<400> 22  
 ttattatcca gaacatctag ttaatcatta cttccaaact agacactatt tacacactct 60  
 atggaaggcg ggtatattat ataagagaga aacaacacat agcgctcat tttgtgggtc 120  
 accatattct tgggaacaag atctacagca tggggc 156

<210> 23  
 <211> 15  
 <212> DNA  
 <213> Hepatitis B virus

<400> 23  
 ctagttaatc attac 15

<210> 24  
 <211> 15  
 <212> DNA  
 <213> Hepatitis B virus

<400> 24  
 ttatataaga gagaa 15

<210> 25  
 <211> 306  
 <212> DNA  
 <213> Hepatitis B virus

<400> 25  
 ctaagcaggc tttcactttc tcgccaaactt acaaggcctt tctgtgtaaa caatacctga 60  
 acctttaccc cggtgcccg caacggccag gtctgtgcca agtgtttgct gacgcaaccc 120  
 ccaactggctg gggcttggtc atgggccatc agcgcacgagc tggaaccttt tcggctcctc 180  
 tgccgatcca tactgcggaa ctctagccg cttgttttgc tcgcagcagg tctggagcaa 240  
 acattatcgg gactgataac tctgttggtc tatcccgcaa atatacatcg tttccatggc 300  
 tgctag 306

<210> 26  
 <211> 21  
 <212> DNA  
 <213> Hepatitis B virus

<400> 26  
 tgtaaacaat acctgaacct t 21

<210> 27  
 <211> 21  
 <212> DNA  
 <213> Hepatitis B virus

<400> 27  
 taccctggtg cccggcaacg g 21

<210> 28  
 <211> 21  
 <212> DNA  
 <213> Hepatitis B virus

<400> 28  
 gctgacgcaa cccccactgg c 21

<210> 29  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 29  
 caccgaagct taagcaggct ttcactttct cg 32

<210> 30  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 30  
 cagtaccgga atgccaagct tcgatg 26

<210> 31  
 <211> 214  
 <212> DNA  
 <213> Vancomycin resistant enterococcus

<400> 31  
 gagatgtata taatttttta ggaaaatctc aaggttatct ttactttttc ttaggaaatt 60  
 aacaatttaa tattaagaaa cggctcgttc ttacacggta gacttaatac cgtaagaacg 120  
 agccgttttc gttcttcaga gaaagatttg acaagattac cattggcatc cccgttttat 180  
 ttggtgcctt tcacagaaag ggttggtcctt aatt 214

<210> 32  
 <211> 10  
 <212> DNA  
 <213> Vancomycin resistant enterococcus

<400> 32  
 ttaggaaatt 10

<210> 33  
 <211> 10  
 <212> DNA  
 <213> Vancomycin resistant enterococcus

<400> 33  
 tattaagaaa 10

<210> 34  
 <211> 10  
 <212> DNA  
 <213> Vancomycin resistant enterococcus

<400> 34  
 cgtaagaacg 10

<210> 35  
 <211> 6905  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> promoter

<400> 35  
 tctagaaaat aattcccaat attgaatccc aaagaattca acatttgggc tgtcgtttga 60  
 aagataagtt gaatttggtc atgaaggaag agagggggga tacaatttca gtaaaaggta 120  
 acagcaaggt ccaaagacag tcaggtcttc agtagtatgg agtatattca gagggagcca 180  
 agatgtctga tgtgaactaa aaagattggt ggttggtagg aggaagaggt gtgagaagag 240  
 gctgtaaaga aaaattgaaa cttgattgtg atggacttta aaggctaggc tatgggactt 300  
 ggacatgaat ctgcaggcca gtgtttgcag actggcgccc ataactgtct atcacagcaa 360  
 cacagacatg tgttggttgg cctgcagagg tttggcctgc atgatgattt taaaccatct 420  
 gaattagtag ccatcatttt caaaaatcaa gagatgccac attaaaatat ggaatgctgc 480  
 tgttcttgaa aataatgaaa catctggaac attgaggcca cattcctgac tgacagcaat 540  
 cagttggagc tgcgtagtga ctgcccactt tacatggggc atctgatccc tagtcgatta 600  
 cagctgccac cacttccctt tatctctcta ataccaagct cttttcactc atttttgtta 660  
 cttaagagat atttgggttt gaaacctctg atgcaggtaa ttgagggtta tagagcagag 720  
 gacagatgct atcagagttg tcttttaaga aagaaccctc tgttcttcat tttgttgaag 780  
 atagcctgga agaggcagc caggggagaa gttagggctg gagctatgag aaagcataag 840  
 atgagatgat ggcttcaaca ttgaggacag aaagaatatt gagatgagaa agtagtccat 900  
 ataagcatct atgcaaagga aatagcagat gtcctcaa at cagcagaggc aacaactctg 960  
 aaagtattatt cataagcccc tcttttcac tccaatccag ttcaaatgta attattttaa 1020



ttgttcttca	ctctccttcc	tggatcatga	atgagctcct	taaatgcagg	gtccacagtg	1080
tcctattcat	cagtgaattc	caagtgccta	gcacagagcc	tggcaaatag	taaattgctta	1140
acaaatattc	gttcagtgca	tgaattggag	tgattctctc	ctttgcctca	taagttgaaa	1200
aaaggtttat	tacataccta	aatatgctga	aatcacaggg	catttgggcaa	cccccaaaaa	1260
ccaaaaactc	cagtttggaa	acagaatttt	aattctgtga	aaataaaatc	cattcatttta	1320
ttcaaaaaat	atttattaaa	caatgaccat	gtccacacca	ggctgagtc	taaggattca	1380
atgatgaaca	aaaaccaaca	tgattcctgc	tcttaggaaa	catacagttc	agtgaggaaa	1440
acagattgtg	agaagtcctc	caacaaatac	tgggtgctat	taaaatatat	taaaagggtga	1500
gtgggtgagg	gacttgagct	agcctaggtg	gttcaggaag	tcttcctgga	tgtgctgata	1560
tgcataggca	ttaactagat	aaatagagag	aaggatgaac	caacattgca	ggtagaggga	1620
acagaatatg	caaaggcagg	aaggattatg	gagtcgttgg	aggacctgaa	taaaggccca	1680
gtgtaagtgg	atctcagaaa	acaggaggaa	aggtgtatga	gatgagatca	gagaggcaga	1740
tcatgtgggg	tatggttaat	gttttggact	tttctattaa	gagcaatggg	gagacagtga	1800
caggacttaa	acggggaaat	aatatgacca	gattaaactt	tctaaaaaac	cctctatgca	1860
aatatatatt	gagagttaat	tattgacaaa	gattcaaagg	caacaaaagt	gagagagaat	1920
agtattttca	aaaaatgggtg	ccaaaacaat	aggacatcta	tattaaaagt	tggttatctg	1980
tctacaaaac	ttaattcaaaa	atggatcaca	gacctaaatg	taaaactgaa	agctatacaa	2040
cttctggaag	gaaaacacag	atgggaatct	gtgtgatctt	gagtttgaaa	atgattttatt	2100
atatctgaca	ccataatccg	taagttaaca	taattcataa	gtgaacaaag	tgatgaactg	2160
gacttcatca	gaatttaaaa	tgtttgtgct	tcaaaaagaca	ctggtatgat	aatgaagaca	2220
aactacagat	aagatattgt	tgaatcatat	ttctgataaa	ggaattgtgg	ctcagaatac	2280
ataactctaa	acccccataa	taaattacaa	gtagcccaat	taaaaaaaaa	aaaagagaaa	2340
aaatttacag	tcttcatcaa	agaaagtatc	aattgtaaaa	taagcacatg	aaaaatgctc	2400
tgcattctta	tctatggggg	gatgaataaa	aaattaaatg	ggaaaagacac	ctctaattag	2460
aataactaaaa	ttaaaaaagac	tgaccatacc	aagtattggt	gaagtggaaa	tgtaaaatga	2520
tacaatcaac	ttaggtagat	gatttggaa	tttcttacaa	aagtaggtgt	atacctaccc	2580
tgtgactcac	ccattccatg	gctaagtatt	tacctgagag	aaatgaaaga	atacatccat	2640
acaaagatgt	ttatacaaat	atttatagca	gttttatttg	tagtagcccc	aaactgaaaa	2700
gaacccaa	gtccatcaaa	agtgaatgga	taaacaaagc	gtggtacagc	aatgcaatag	2760
aatactactt	agcaataaag	aagaatgagc	tagtgatata	cataacagct	taaattgtaca	2820
tcaaaggcat	tgtgctcagt	gaaagatgca	agtaaaaaaa	aaaaagagta	catgctgtat	2880
agttccattg	acataaaaact	ctggaaaagt	aaaaacagtc	tatactgaca	gaaagcagat	2940
catgtggttg	ctgaggagga	ggagtatagg	agaggtggag	ggaaaatgta	caaagtggca	3000
caataaaaaac	ttttggaatc	atagatatat	tactactctt	gattgagtga	tgatttcatg	3060
agtgacagtg	cgtgtgtcaa	aaatgatcaa	tttatgcaac	tttaaatatg	tgcagtttat	3120
tgtatatatc	aattatacct	cagtacggct	attaaaaaga	aaccctctgg	ctgcacaatg	3180
cagaactgat	tctaggaaa	agtggaggga	ggatgaccat	ttacagtgct	ccaggtggaa	3240
gagaacggtg	ccttctggaa	gtgaactagg	ttggcaacaa	cagagatgaa	ataaatgggc	3300
agatgtgtga	gatacttagg	aaataaaaacc	cgatggtcac	cattttccaa	aggtcagctc	3360
atcctggctt	tccagagcaa	agagctaggg	aagactttat	taataaatcc	ctcttgaagt	3420
tgcagagaaa	gcttatagca	gaaacttact	ctcaacctga	ctaactctgag	agaacacctc	3480
tggttccatt	tgattactaa	aaaactgcaa	agaaacagag	gagaaagaag	aagaaagctg	3540
gtacaaaacag	tgaacttata	taatattaat	caataattgt	ctcttgttct	taaaagcaat	3600
gggaagaaaa	tgagatttga	gctggaagat	cagagttcaa	aatccaaata	aagtatatgg	3660
ccctaatatg	cttatagtag	ttaacctttc	ctgataatga	tataattgtt	gacagcacca	3720
tctttaaaaat	aaaataacat	agtaatcctt	cagatttgta	gaagatcttt	cctgtttaca	3780
agtttgttct	atacacatta	tgtcttttaa	atgacacact	agccttctga	gggtaactta	3840
tattggcaac	agttttcaga	tgtggaaaact	gtgaagacaa	tgttggtgat	gtggaagcaa	3900
cataaaacttt	ggagtctttc	agacccaggt	ttgaatgtca	gactgctttt	tattcagagt	3960
aacttcagag	cattattttc	caccttaatt	ttttttcagg	cctctttgtg	tctatgtgtc	4020
ctcttcactc	ctgtccattg	tttcttcagt	gatttttgcc	accttccttc	actgttagtg	4080
tgtagacaca	tagttctcct	ggctctgaga	gcctatgtta	attccattct	accatcctgc	4140
cacggccccc	tcaattccta	ttgagcaatg	ctagttgaaa	gttgtggtgg	gattaaatgt	4200
tgcaatgagt	attcaaatga	ggttgaagta	tctacgcatt	ctacttacat	atgggtgaggt	4260
atattcaagg	aagctgtagc	cattaaaaatc	tcaggaaata	atttttcacc	tcctcaggtg	4320
aaagggtcct	caggcctttg	tgttctggaa	ggttcattta	tagccatttc	ccaaatgaca	4380
atgcgattga	tgagtctaga	gtctagctca	aatagcaatg	gactggaaga	ctagtttagg	4440
ttttactaat	gtggaacata	gaacaaatta	tgtccttggt	tcagcctggt	catctgtgaa	4500
atagagccta	tcatatccag	tcttccttgc	gttttaggtt	gagttacctt	ctttggtcaa	4560
ggtaagtaaa	tgccctatgat	gtttggctgt	gcacaagata	aagctacaac	aaagctacaa	4620
cccatctttt	ctctgtagaa	gactcaaaaa	gcaaaaagaga	cccaggaaaa	tctcggaatg	4680
acttttggaa	cagagagcct	ccccagaatc	agaagtcaag	gaatttaaac	atagggaagg	4740



<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 38  
cacgctggt accagacagt gacaggactt aaacggggaa at

42

<210> 39  
<211> 16  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 39  
agctggctcc ccggga

16

<210> 40  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 40  
cacgctggt acctatacac attatgtctt ttaaattgac

39

<210> 41  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 41  
agctggctcc ccgggatctc ggaggggacgc

30

<210> 42  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 42  
cacgctggt acctatacac attatgtctt ttaaattgac

39

<210> 43  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 43

ccgccatggg gagcttggct gaatcttcca

30

<210> 44

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 44

ccgggtacct gccctcgccc acgctgcgcc

30

<210> 45

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 45

agctggctcc ccgggatctc ggaggggcgc

30

<210> 46

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 46

ccgggtacct gccctcgccc acgctgcgcc

30

<210> 47

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 47

agctggctcc ccgggatctc ggaggggcgc

30

<210> 48

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 48

cagaacattt ctctatcgat aggtaccgag caggtattcc tatcgtcctt ttcc

54

<210> 49

<211> 54

<212> DNA

<213> Artificial Sequence

<220>  
 <223> primer  
  
 <400> 49  
 ggaaaaggac gataggaata cctgctcggt acctatcgat agagaaatgt tctg 54  
  
 <210> 50  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 50  
 cagaacattt ctctatcgat aggtaccaaa tctggagccc tggcgctaa acct 54  
  
 <210> 51  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 51  
 aggttttaggc gccagggctc cagatttggt acctatcgat agagaaatgt tctg 54  
  
 <210> 52  
 <211> 51  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 52  
 cagaacattt ctctatcgat aggtaccggc gttagcgcg cgtgagggga g 51  
  
 <210> 53  
 <211> 51  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 53  
 tctccctcac cgcgcgctaa cgccggtacc tatcgataga gaaatgttct g 51  
  
 <210> 54  
 <211> 57  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 54  
 cagaacattt ctctatcgat aggtaccggg aaaaggaggt gggaaggcaa ggaggcc 57  
  
 <210> 55

<211> 57  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 55  
 ggccctccttg ccttcccacc tccttttccc ggtacctatc gatagagaaa tgttctg 57  
  
 <210> 56  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 56  
 cagaacattt ctctatcgat aggtaccctc gcaaactgtt gcatttgctc tccacctccc 60  
  
 <210> 57  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 57  
 gggagggtgga gagcaaatgc aacagtttgc gagggtacct atcgatagag aaatgttctg 60  
  
 <210> 58  
 <211> 65  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 58  
 ccagtgtgtg acaggagccg aaggggacgca ccccatggaa gacgccaaaa acataaagaa 60  
 aggcc 65  
  
 <210> 59  
 <211> 63  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 59  
 cctttcttta tgtttttggc gtcttccatg ggggtgcgtcc cttcggtcc tgtacagcac 60  
 tgg 63  
  
 <210> 60  
 <211> 59  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>

<223> primer

<400> 60

ccacaggcag aggaggcgac agagggccat ggaagacgcc aaaaacataa agaaaggcc 59

<210> 61

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 61

cctttcttta tggttttggc gtcttccatg gccctctgtc gctcctctgt cctgtgg 57

<210> 62

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 62

gggagagcgg gacgggtccg agcaagccca ccatggaaga cgccaaaaac ataaagaaag 60  
gcc 63

<210> 63

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 63

ggcctttctt tatgtttttg gcgtcttcca tgggtgggctt gctccggacc gtcccgtctt 60  
ccc 63

<210> 64

<211> 17

<212> DNA

<213> Homo sapiens

<400> 64

tgttgcattt gctctcc 17

<210> 65

<211> 16

<212> DNA

<213> Homo sapiens

<400> 65

gctctccacc tcccag 16

<210> 66

<211> 25

<212> DNA

<213> Homo sapiens

<400> 66

ggtgagggga ggggagaaaa ggaaa

25

<210> 67

<211> 2167

<212> DNA

<213> Homo sapiens

<400> 67

caggccccac	aaaacctaga	tctgccccag	tataactaaa	tctgggacca	tttattgagc	60
aattattatg	tgccaagtat	tgcgctgagt	gcttccagag	cattatctcc	tttaacccca	120
gcatagtatg	tcagatgctg	ttttacagat	gagccaactg	agaccagaga	tgctcagtca	180
cttgcccaag	gtgacatgac	tgatatggaa	tagagtcaag	atTTTTTTTT	TTTTTTTga	240
cacggagtct	cactctgtct	cccaggctgg	agtgcagagg	cgcaatctca	gctcactgca	300
agctctgcct	cccaggttca	cgcatctctc	tgcctcagcc	tcctgagtag	ctgggactac	360
aggcaccgcg	caccacacct	ggctaatttt	ttgtattttt	agcagagaca	gggtttcacc	420
gtgttagcca	ggatgggtctc	gatctcctga	cctcgtgatc	tgctgcctc	ggcctcccaa	480
agtgatggaa	ttacaggtgt	gagccaccgc	gactggccag	attcaagatt	tgaaccagg	540
tcctcttggg	cccagaggcc	cctgtttctc	aactccctag	catgcatacg	cacctgtccc	600
tctagagggtg	cctgcttaag	tgtgctcagc	acatggaagc	aagttagaaa	tgctaggtat	660
acctgtaaag	aggtgtggga	gatggggggg	agggaaagaga	gaaagagatg	ctgggtgtcct	720
tcattctcca	gtccctgata	ggtgcctttg	atcccttctt	gaccagtata	gctgcattct	780
tggctggggc	attccaacta	gaactgccaa	atttagcaca	taaaaataag	gaggcccagt	840
taaaattgaa	tttcagataa	acaatgaata	atttgttagt	ataaatatgt	cccatgcaat	900
atcttgttga	aattaaaaaa	aaaaaaaaaa	gtcttccttc	catccccacc	cctaccacta	960
ggcctaagga	atagggtcag	gggctccaaa	tagaatgtgg	ttgagaagtg	gaattaagca	1020
ggctaataga	aggcaagggt	caaagaagaa	accttgaatg	cattgggtgc	tggtgtcctc	1080
cttaaataag	caagaagggt	gcattttgaa	gaattgagat	agaagtcttt	ttgggtctgg	1140
tgagttgct	cgtggttgta	attccagcac	tttgggaggc	tgaggcgagg	ggatcacctg	1200
agcttgggag	ttcaagacca	gcctcaccaa	cgtggagaaa	ccctgtcttt	actaaaaata	1260
caaaaaattc	agctggtcat	ggtggcacat	gcctgtaatc	ccagctgctc	gggaggctga	1320
ggcaggagaa	tcacttgaac	caggagggca	gaggttggtg	tgagcagaga	tcgcgccatt	1380
gctctccagc	ctgggcaaca	agagcaaaa	ttcgtttaaa	aaaaaaaaaa	agtccttttc	1440
atgtgactgt	ctcctcccaa	attttagtag	cctcttaaga	tcattgctttt	cagatacttc	1500
aaagattcca	gaagatatgc	cccgggggtc	ctggaagcca	caaggtaaac	acaacacatc	1560
cccctccttg	actatcaatt	ttactagagg	atgtggtggg	aaaaccatta	tttgatatta	1620
aaacaatagg	cttgggatgg	agtaggatgc	aagctcccca	ggaagttaga	taactgagac	1680
ttaaagggtg	ttaaagagtg	cagcctaggg	aaatttatcc	cggactccgg	gggagggggc	1740
agagtcacca	gcctctgcat	ttagggatcc	tccgaggaaa	agtgtgagaa	cggctgcagg	1800
caaccagggc	gtcccggcgc	taggaggggc	gacccaggcc	tgcgcgagaa	gagggagaaa	1860
gtgaagctgg	gagttgccga	ctcccagact	tcgttggaat	gcagttggag	ggggcgagct	1920
gggagcgcg	ttgctcccaa	tcaccggaga	aggaggaggt	ggaggaggag	ggctgcttga	1980
ggaagtataa	gaatgaagtt	gtgaagctga	gattcccctc	cattgggacc	ggagaaacca	2040
ggggagcccc	ccgggcagcc	gcgcgcccct	tcccacgggg	ccctttactg	cgcgcgcgc	2100
ccggccccca	cccctcgcag	caccccgcg	cccgcgcctt	cccagccggg	tccagccgga	2160
gccatgg						2167

<210> 68

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 68

gcacgcgtaa gcttcaggcc ccacaaaacc ta

32

<210> 69

<211> 35

<212> DNA

<213> Artificial Sequence



<220>  
 <223> primer

<400> 69  
 cgctcgagcc atggctccgg ctggacccgg ctggg 35

<210> 70  
 <211> 10  
 <212> DNA  
 <213> Homo sapiens

<400> 70  
 gaatgaagtt 10

<210> 71  
 <211> 15  
 <212> DNA  
 <213> Homo sapiens

<400> 71  
 cgcttgctcc caatc 15

<210> 72  
 <211> 13  
 <212> DNA  
 <213> Homo sapiens

<400> 72  
 gaggaaggta taa 13

<210> 73  
 <211> 135  
 <212> DNA  
 <213> Escherichia coli

<400> 73  
 gacgtcaggt ggcacttttc ggggaaatgt ggcgcggaacc cctatttggt tatttttcta 60  
 atacattcaa atatgtatcc gctcatgaga caataaccct gataaatgct tcaataatat 120  
 tgaaaaagga agagt 135

<210> 74  
 <211> 136  
 <212> DNA  
 <213> Escherichia coli

<400> 74  
 gacgtcaggt ggcacttttc ggggaaatgt ggcgcggaacc cctatctggt tgttcttcta 60  
 gacacattca cacatgtatc cgctcatgag acaataaccc tgataaatgc ttcaatgaca 120  
 ttgagaaagg aagagt 136

<210> 75  
 <211> 12  
 <212> DNA  
 <213> Escherichia coli

<400> 75  
 aatacattca aa 12

<210> 76  
 <211> 12  
 <212> DNA  
 <213> Escherichia coli

<400> 76  
catgagacaa ta 12

<210> 77  
<211> 12  
<212> DNA  
<213> Escherichia coli

<400> 77  
accctgataa at 12

<210> 78  
<211> 12  
<212> DNA  
<213> Escherichia coli

<400> 78  
ttgaaaaagg aa 12

1234567891011121314151617181920212223242526272829303132333435363738394041424344454647484950515253545556575859606162636465666768697071727374757677787980818283848586878889909192939495969798991001011021031041051061071081091101111121131141151161171181191201211221231241251261271281291301311321331341351361371381391401411421431441451461471481491501511521531541551561571581591601611621631641651661671681691701711721731741751761771781791801811821831841851861871881891901911921931941951961971981992002012022032042052062072082092102112122132142152162172182192202212222232242252262272282292302312322332342352362372382392402412422432442452462472482492502512522532542552562572582592602612622632642652662672682692702712722732742752762772782792802812822832842852862872882892902912922932942952962972982993003013023033043053063073083093103113123133143153163173183193203213223233243253263273283293303313323333343353363373383393403413423433443453463473483493503513523533543553563573583593603613623633643653663673683693703713723733743753763773783793803813823833843853863873883893903913923933943953963973983994004014024034044054064074084094104114124134144154164174184194204214224234244254264274284294304314324334344354364374384394404414424434444454464474484494504514524534544554564574584594604614624634644654664674684694704714724734744754764774784794804814824834844854864874884894904914924934944954964974984995005015025035045055065075085095105115125135145155165175185195205215225235245255265275285295305315325335345355365375385395405415425435445455465475485495505515525535545555565575585595605615625635645655665675685695705715725735745755765775785795805815825835845855865875885895905915925935945955965975985996006016026036046056066076086096106116126136146156166176186196206216226236246256266276286296306316326336346356366376386396406416426436446456466476486496506516526536546556566576586596606616626636646656666676686696706716726736746756766776786796806816826836846856866876886896906916926936946956966976986997007017027037047057067077087097107117127137147157167177187197207217227237247257267277287297307317327337347357367377387397407417427437447457467477487497507517527537547557567577587597607617627637647657667677687697707717727737747757767777787797807817827837847857867877887897907917927937947957967977987998008018028038048058068078088098108118128138148158168178188198208218228238248258268278288298308318328338348358368378388398408418428438448458468478488498508518528538548558568578588598608618628638648658668678688698708718728738748758768778788798808818828838848858868878888898908918928938948958968978988999009019029039049059069079089099109119129139149159169179189199209219229239249259269279289299309319329339349359369379389399409419429439449459469479489499509519529539549559569579589599609619629639649659669679689699709719729739749759769779789799809819829839849859869879889899909919929939949959969979989991000100110021003100410051006100710081009101010111012101310141015101610171018101910201021102210231024102510261027102810291030103110321033103410351036103710381039104010411042104310441045104610471048104910501051105210531054105510561057105810591060106110621063106410651066106710681069107010711072107310741075107610771078107910801081108210831084108510861087108810891090109110921093109410951096109710981099110011011102110311041105110611071108110911101111111211131114111511161117111811191120112111221123112411251126112711281129113011311132113311341135113611371138113911401141114211431144114511461147114811491150115111521153115411551156115711581159116011611162116311641165116611671168116911701171117211731174117511761177117811791180118111821183118411851186118711881189119011911192119311941195119611971198119912001201120212031204120512061207120812091210121112121213121412151216121712181219122012211222122312241225122612271228122912301231123212331234123512361237123812391240124112421243124412451246124712481249125012511252125312541255125612571258125912601261126212631264126512661267126812691270127112721273127412751276127712781279128012811282128312841285128612871288128912901291129212931294129512961297129812991300130113021303130413051306130713081309131013111312131313141315131613171318131913201321132213231324132513261327132813291330133113321333133413351336133713381339134013411342134313441345134613471348134913501351135213531354135513561357135813591360136113621363136413651366136713681369137013711372137313741375137613771378137913801381138213831384138513861387138813891390139113921393139413951396139713981399140014011402140314041405140614071408140914101411141214131414141514161417141814191420142114221423142414251426142714281429143014311432143314341435143614371438143914401441144214431444144514461447144814491450145114521453145414551456145714581459146014611462146314641465146614671468146914701471147214731474147514761477147814791480148114821483148414851486148714881489149014911492149314941495149614971498149915001501150215031504150515061507150815091510151115121513151415151516151715181519152015211522152315241525152615271528152915301531153215331534153515361537153815391540154115421543154415451546154715481549155015511552155315541555155615571558155915601561156215631564156515661567156815691570157115721573157415751576157715781579158015811582158315841585158615871588158915901591159215931594159515961597159815991600160116021603160416051606160716081609161016111612161316141615161616171618161916201621162216231624162516261627162816291630163116321633163416351636163716381639164016411642164316441645164616471648164916501651165216531654165516561657165816591660166116621663166416651666166716681669167016711672167316741675167616771678167916801681168216831684168516861687168816891690169116921693169416951696169716981699170017011702170317041705170617071708170917101711171217131714171517161717171817191720172117221723172417251726172717281729173017311732173317341735173617371738173917401741174217431744174517461747174817491750175117521753175417551756175717581759176017611762176317641765176617671768176917701771177217731774177517761777177817791780178117821783178417851786178717881789179017911792179317941795179617971798179918001801180218031804180518061807180818091810181118121813181418151816181718181819182018211822182318241825182618271828182918301831183218331834183518361837183818391840184118421843184418451846184718481849185018511852185318541855185618571858185918601861186218631864186518661867186818691870187118721873187418751876187718781879188018811882188318841885188618871888188918901891189218931894189518961897189818991900190119021903190419051906190719081909191019111912191319141915191619171918191919201921192219231924192519261927192819291930193119321933193419351936193719381939194019411942194319441945194619471948194919501951195219531954195519561957195819591960196119621963196419651966196719681969197019711972197319741975197619771978197919801981198219831984198519861987198819891990199119921993199419951996199719981999200020012002200320042005200620072008200920102011201220132014201520162017201820192020202120222023202420252026202720282029203020312032203320342035203620372038203920402041204220432044204520462047204820492050205120522053205420552056205720582059206020612062206320642065206620672068206920702071207220732074207520762077207820792080208120822083208420852086208720882089209020912092209320942095209620972098209921002101210221032104210521062107210821092110211121122113211421152116211721182119212021212122212321242125212621272128212921302131213221332134213521362137213821392140214121422143214421452146214721482149215021512152215321542155215621572158215921602161216221632164216521662167216821692170217121722173217421752176217721782179218021812182218321842185218621872188218921902191219221932194219521962197219821992200220122022203220422052206220722082209221022112212221322142215221622172218221922202221222222232224222522262227222822292230223122322233223422352236223722382239224022412242224322442245224622472248224922502251225222532254225522562257225822592260226122622263226422652266226722682269227022712272227322742275227622772278227922802281228222832284228522862287228822892290229122922293229422952296229722982299230023012302230323042305230623072308230923102311231223132314231523162317231823192320232123222323232423252326232723282329233023312332233323342335233623372338233923402341234223432344234523462347234823492350235123522353235423552356235723582359236023612362236323642365236623672368236923702371237223732374237523762377237823792380238123822383238423852386238723882389239023912392239323942395239623972398239924002401240224032404240524062407240824092410241124122413241424152416241724182419242024212422242324242425242624272428242924302431243224332434243524362437243824392440244124422443244424452446244724482449245024512452245324542455245624572458245924602461246224632464246524662467246824692470247124722473247424752476247724782479248024812482248324842485248624872488248924902491249224932494249524962497249824992500250125022503250425052506250725082509251025112512251325142515251625172518251925202521252225232524252525262527252825292530253125322533253425352536253725382539254025412542254325442545254625472548254925502551255225532554255525562557255825592560256125622563256425652566256725682569257025712572257325742575257625772578257925802581258225832584258525862587258825892590259125922593259425952596259725982599260026012602260326042605260626072608260926102611261226132614261526162617261826192620262126222623262426252626262726282629263026312632263326342635263626372638263926402641264226432644264526462647264826492650265126522653265426552656265726582659266026612662266326642665266626672668266926702671267226732674267526762677267826792680268126822683268426852686268726882689269026912692269326942695269626972698269927002701270227032704270527062707270827092710271127122713271427152716271727182719272027212722272327242725272627272728272927302731273227332734273527362737273827392740274127422743274427452746274727482749275027512752275327542755275627572758275927602761276227632764276527662767276827692770277127722773277427752776277727782779278027812782278327842785278627872788278927902791279227932794279527962797279827992800280128022803280428052806280728082809281028112812281328142815281628172818281928202821282228232824282528262827282828292830283128322833283428352836283728382839284028412842284328442845284628472848284928502851285228532854285528562857285828592860286128622863286428652866286728682869287028712872287328742875287628772878287928802881288228832884288528862887288828892890289128922893289428952896289728982899290029012902290329042905290629072908290929102911291229132914291529162917291829192920292129222923292429252926292729282929293029312932293329342935293629372938293929402941294229432944294529462947294829492950295129522953295429552956295729582959296029612962296329642965296629672968296929702971297229732974297529762977297829792980298129822983298429852986298729882989299029912992299329942995299629972998299930003001300230033004300530063007300830093010301130123013301430153016301730183019302030213022302330243025302630273028302930303031303230333034303530363037303830393040304130423043304430453046304730483049305030513052305330543055305630573058305930603061306230633064306530663067306830693070307130723073307430753076307730783079308030813082308330843085308630873088308930903091309230933094309530963097309830993100310131023103310431053106310731083109311031113112311331143115311631173118311931203121312231233124312531263127312831293130313131323133313431353136313731383139314031413142314331443145314631473148314931503151315231533154315531563157315831593160316131623163316431653166316731683169317031713172317331743175317631773178317931803181318231833184318531863187318831893190319131923193319431953196319731983199320032013202320332043205320632073208320932103211321232133214321532163217321832193220322132223223322343225322632273228322932303231323232333234323532363237323832393240324132423243324432453246324732483249325032513252325332543255325632573258325932603261326232633264326532663267326832693270327132723273327432753276327732783279328032813282328332843285